

Computational platform technologies for  
the enhanced biological productions

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Biological production of various chemicals and materials in the context of metabolic engineering can now be greatly enhanced by computational platform technologies that use genomic data. To this end, relevant computational platform technologies will be discussed, including GSM and DeepEC. GSM allows automated genome-scale metabolic modeling that also involves secondary metabolism, whereas DeepEC predicts enzyme commission (EC) numbers with high precision in a high-throughput manner by taking a protein sequence as an input. DeepEC is a critical component of GSM, which serves to associate a protein sequence with a specific biochemical reaction. It should be noted that these computational tools can also be applied to biomedical problems associated with metabolism. Continued efforts in developing computational platform technologies along with generation of meaningful biological datasets will innovate our approaches to tackling various metabolic engineering problems.